FIG. 1a

FIG. 1b

	RATIOS	50	52	54	56	57	58	59
REVERSE 2	-1.76				X			X
REVERSE 1	-0.49		X		X			
NEUTRAL	0.00					X		
1	3.25					X		X
2	2.24					X	X	
3'	1.90	X				X		
3	1.57		X				X	
4	1.00	X	X					
5	0.69		X	X				
6	0.60	X		X				
7	0.54			X				X
8	0.45			X			X	

(X = ENGAGED CLUTCH)

$$\frac{\text{RING GEAR}}{\text{SUN GEAR}} \text{ TOOTH RATIO: } \frac{N_{R1}}{N_{S1}} = 1.51, \frac{N_{R2}}{N_{S2}} = 2.97, \frac{N_{R3}}{N_{S3}} = 2.25$$

RATIO SPREAD	7.23
RATIO STEPS	
REV2/1	-0.54
1/2	1.45
2/3	1.43
3/4	1.56
4/5	1.46
5/6	1.14
6/7	1.11
7/8	1.20

FIG. 2a
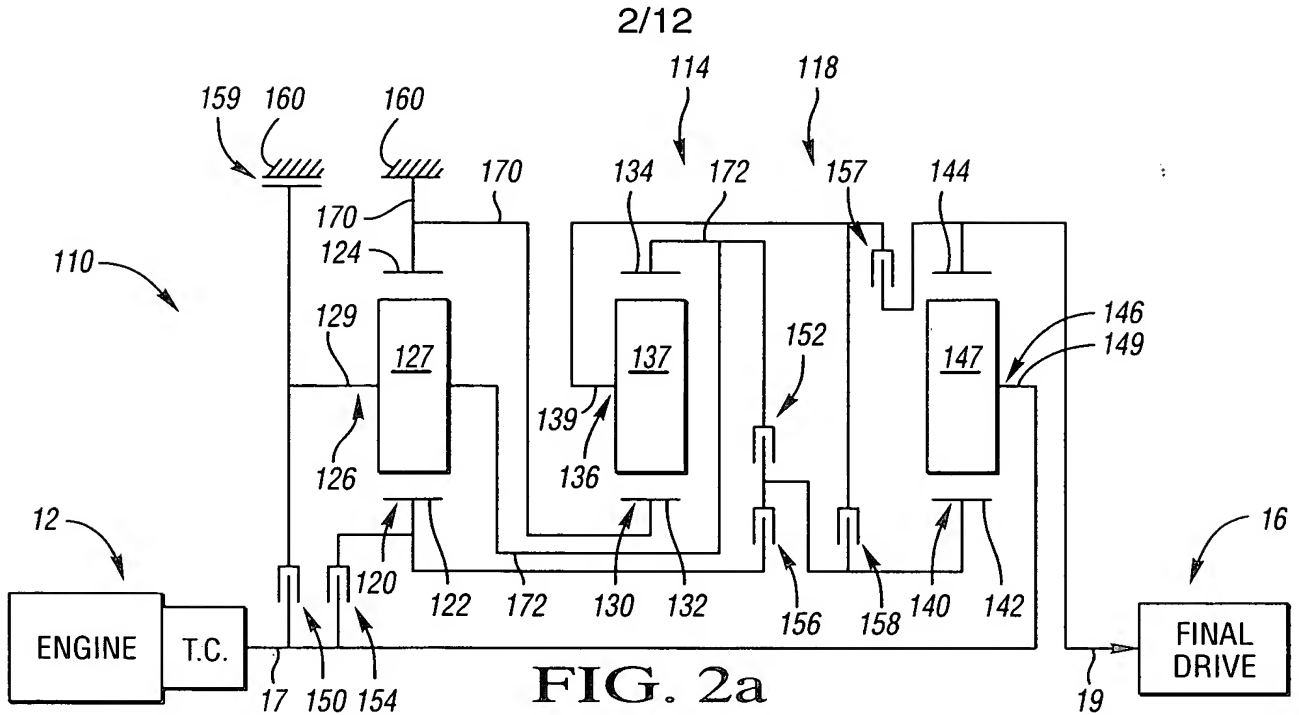
FIG. 2b

	RATIOS	150	152	154	156	157	158	159
REVERSE	-7.09	X			X			
NEUTRAL	0.00					X		
1	4.62			X		X		
2	2.42				X	X		
3	1.67	X				X		
4	1.26		X			X		
5	1.00	X	X					
6	0.79	X					X	
7	0.71		X	X				
8	0.66			X			X	
9	0.61						X	X

(X = ENGAGED CLUTCH)

$$\frac{\text{RING GEAR}}{\text{SUN GEAR}} \text{ TOOTH RATIO: } \frac{N_{R1}}{N_{S1}} = 1.77, \frac{N_{R2}}{N_{S2}} = 1.49, \frac{N_{R3}}{N_{S3}} = 1.55$$

RATIO SPREAD	7.57
RATIO STEPS	
REV/1	-1.53
1/2	1.91
2/3	1.45
3/4	1.33
4/5	1.26
5/6	1.27
6/7	1.11
7/8	1.08
8/9	1.08

FIG. 3a

	RATIOS	250	252	254	256	257	258	259
REVERSE	-4.62	X			X			
NEUTRAL	0.00						X	
1	5.16			X			X	
2	2.53				X		X	
3	1.67	X					X	
4	1.25		X				X	
5	1.00	X	X					
6	0.75		X			X		
7	0.72		X	X				
8	0.63		X					X
8'	0.32	X				X		

(X = ENGAGED CLUTCH)

$\dfrac{\text{RING GEAR}}{\text{SUN GEAR}}$ TOOTH RATIO: $\dfrac{N_{R1}}{N_{S1}} = 2.09$, $\dfrac{N_{R2}}{N_{S2}} = 1.50$, $\dfrac{N_{R3}}{N_{S3}} = 1.72$

RATIO SPREAD	8.19
RATIO STEPS	
REV/1	-0.90
1/2	2.04
2/3	1.51
3/4	1.34
4/5	1.25
5/6	1.33
6/7	1.04
7/8	1.14

FIG. 3b
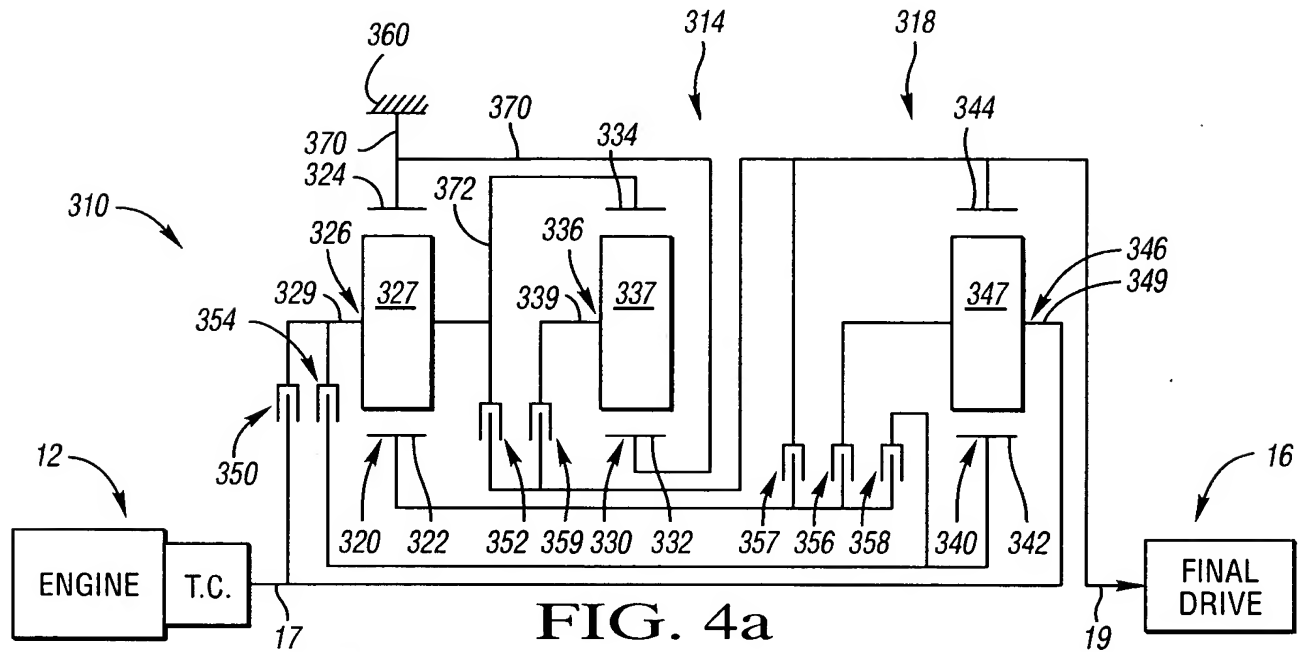
FIG. 4a

FIG. 4b

	RATIOS	350	352	354	356	357	358	359
REVERSE	-7.09	X					X	
NEUTRAL	0.00							X
1	4.62				X			X
2'	2.77		X		X			
2	2.42						X	X
3'	1.69		X				X	
3	1.67	X						X
4	1.26			X				X
5	1.00		X	X				
6	0.75			X		X		
7	0.71			X	X			
8	0.61			X			X	

(X = ENGAGED CLUTCH)

$$\frac{\text{RING GEAR}}{\text{SUN GEAR}} \text{ TOOTH RATIO: } \frac{N_{R1}}{N_{S1}} = 1.77, \ \frac{N_{R2}}{N_{S2}} = 1.49, \ \frac{N_{R3}}{N_{S3}} = 1.55$$

RATIO SPREAD	7.60
RATIO STEPS	
REV/1	-1.53
1/2	1.91
2/3	1.45
3/4	1.32
4/5	1.26
5/6	1.33
6/7	1.06
7/8	1.16
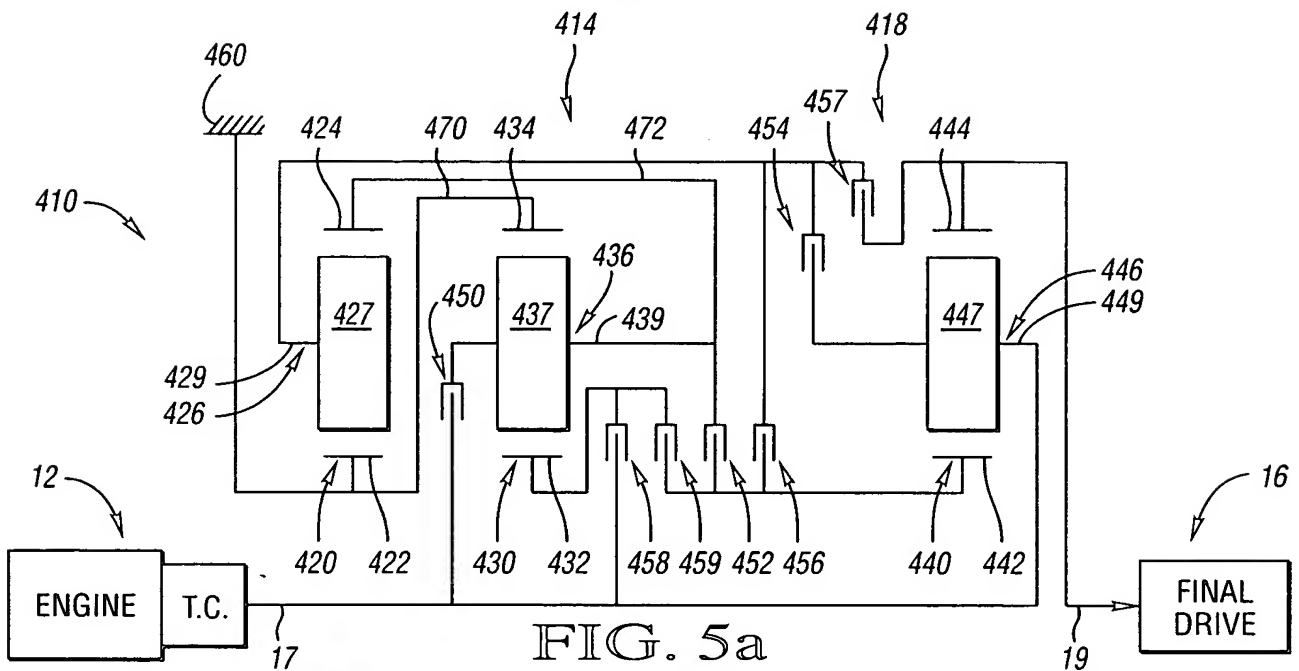
FIG. 5a

FIG. 5b

	RATIOS	450	452	454	456	457	458	459
REVERSE 2	-4.63	X						X
REVERSE 1	-0.71			X				X
NEUTRAL	0.00					X		
1	5.13					X	X	
2	2.52					X		X
3	1.66	X				X		
3'	1.63		X	X				
4	1.24		X			X		
5	1.00	X	X					
6	0.81	X			X			
6'	0.72		X				X	
7	0.68				X		X	
8	0.63				X			X

(X = ENGAGED CLUTCH)

$$\frac{\text{RING GEAR}}{\text{SUN GEAR}} \text{ TOOTH RATIO: } \frac{N_{R1}}{N_{S1}} = 1.51, \frac{N_{R2}}{N_{S2}} = 2.09, \frac{N_{R3}}{N_{S3}} = 1.72$$

RATIO SPREAD	8.12
RATIO STEPS	
REV2/1	-0.90
1/2	2.04
2/3	1.52
3/4	1.34
4/5	1.24
5/6	1.23
6/7	1.19
7/8	1.08

FIG. 6a

FIG. 6b

	RATIOS	550	552	554	556	557	558	559
REVERSE 2	-4.12		X	X				
REVERSE 1	-1.09			X				X
NEUTRAL	0.00						X	
1	5.63					X	X	
2	4.00	X				X		
3	2.36					X		X
4	1.88		X			X		
4'	1.20	X						X
5	1.00	X	X					
6	0.89		X				X	
7	0.75				X		X	
8	0.71		X	X				

(X = ENGAGED CLUTCH)

$$\frac{\text{RING GEAR}}{\text{SUN GEAR}} \text{ TOOTH RATIO: } \frac{N_{R1}}{N_{S1}} = 3.00, \frac{N_{R2}}{N_{S2}} = 2.45, \frac{N_{R3}}{N_{S3}} = 2.41$$

RATIO SPREAD	7.93
RATIO STEPS	
REV2/1	-0.73
1/2	1.41
2/3	1.69
3/4	1.26
4/5	1.88
5/6	1.12
6/7	1.19
7/8	1.06
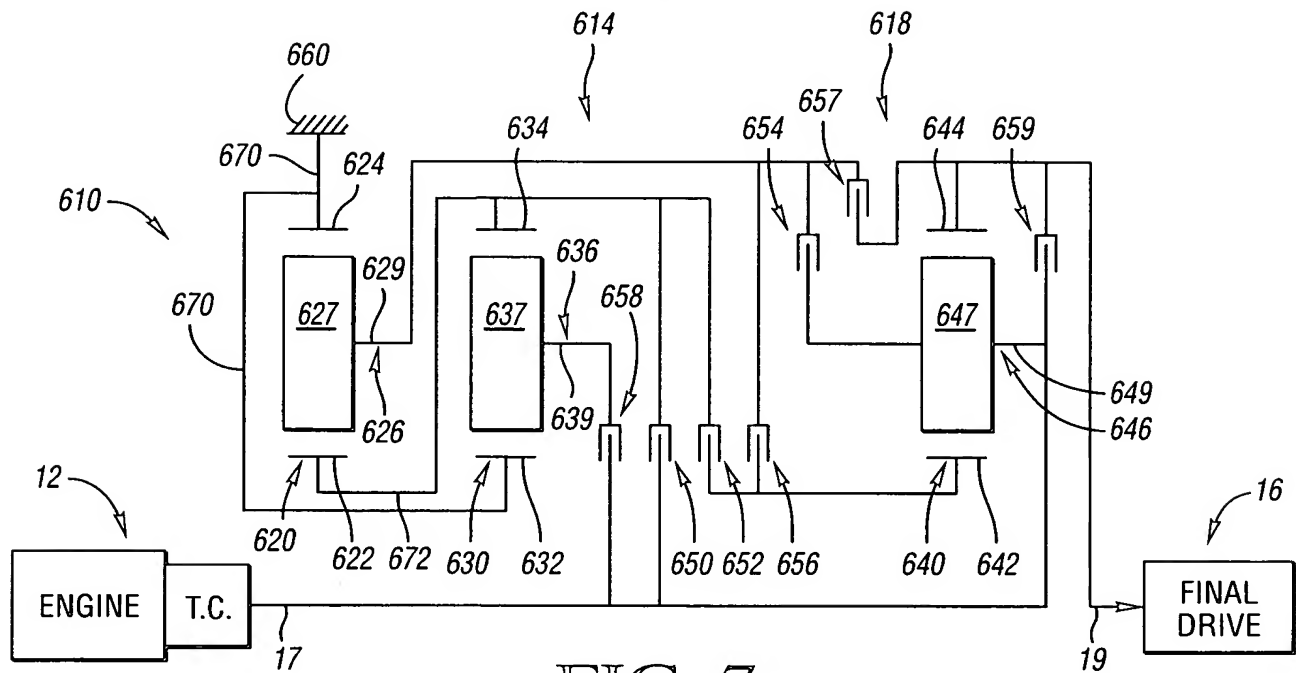
FIG. 7a

	RATIOS	650	652	654	656	657	658	659
REVERSE	-4.12		X	X				
NEUTRAL	0.00					X		
1	4.00	X				X		
2	2.66					X	X	
3	1.88		X			X		
4	1.26		X				X	
5	1.00						X	X
6	0.79				X		X	
7	0.76	X				X		
8	0.71		X			X		

(X = ENGAGED CLUTCH)

FIG. 7b

$$\frac{\text{RING GEAR}}{\text{SUN GEAR}} \text{ TOOTH RATIO: } \frac{N_{R_1}}{N_{S_1}} = 3.00, \ \frac{N_{R_2}}{N_{S_2}} = 2.00, \ \frac{N_{R_3}}{N_{S_3}} = 2.41$$

RATIO SPREAD	5.63
RATIO STEPS	
REV/1	-1.03
1/2	1.50
2/3	1.41
3/4	1.49
4/5	1.26
5/6	1.27
6/7	1.04
7/8	1.07
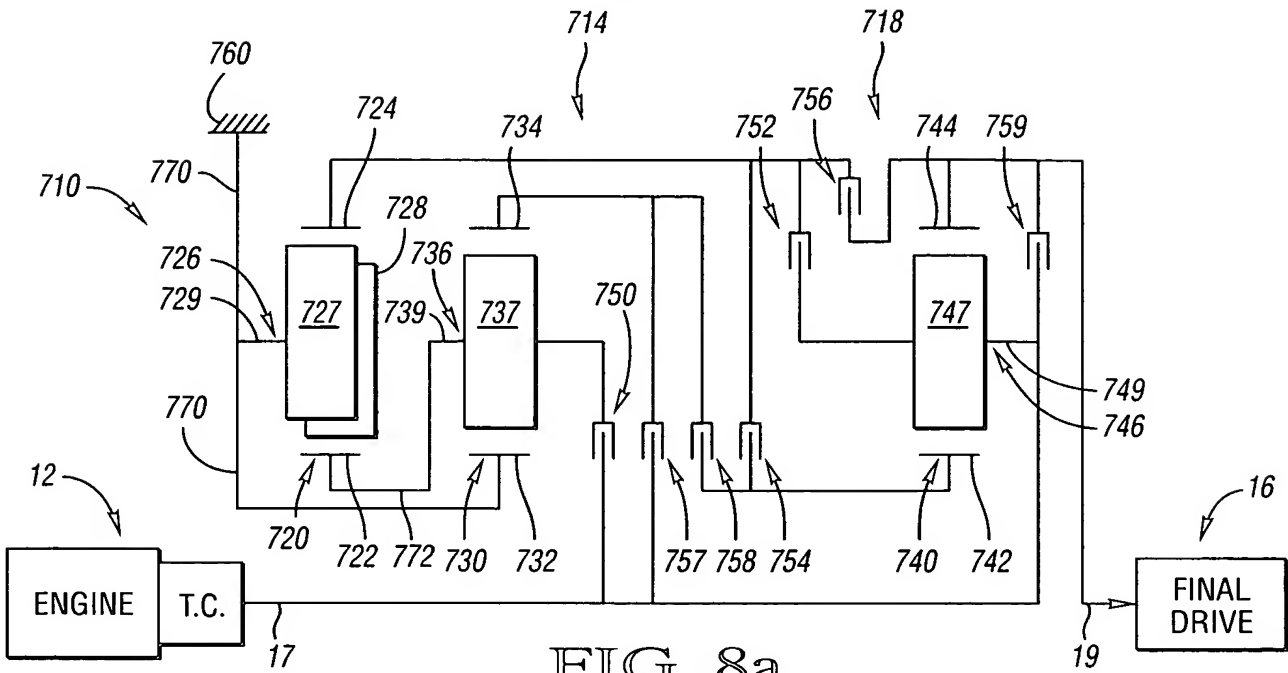
FIG. 8a

	RATIOS	750	752	754	756	757	758	759
REVERSE	-2.08		X				X	
NEUTRAL	0.00				X			
1	4.58				X	X		
2	3.25	X			X			
3	2.05				X		X	
4	1.20	X					X	
5	1.00	X						X
6	0.78	X		X				
7	0.76			X		X		
8	0.71			X			X	

(X = ENGAGED CLUTCH)

$$\frac{\text{RING GEAR}}{\text{SUN GEAR}} \text{ TOOTH RATIO: } \frac{N_{R1}}{N_{S1}} = 3.25, \frac{N_{R2}}{N_{S2}} = 2.45, \frac{N_{R3}}{N_{S3}} = 2.41$$

RATIO SPREAD	6.47
RATIO STEPS	
REV/1	-0.45
1/2	1.41
2/3	1.59
3/4	1.70
4/5	1.20
5/6	1.29
6/7	1.03
7/8	1.06

FIG. 8b
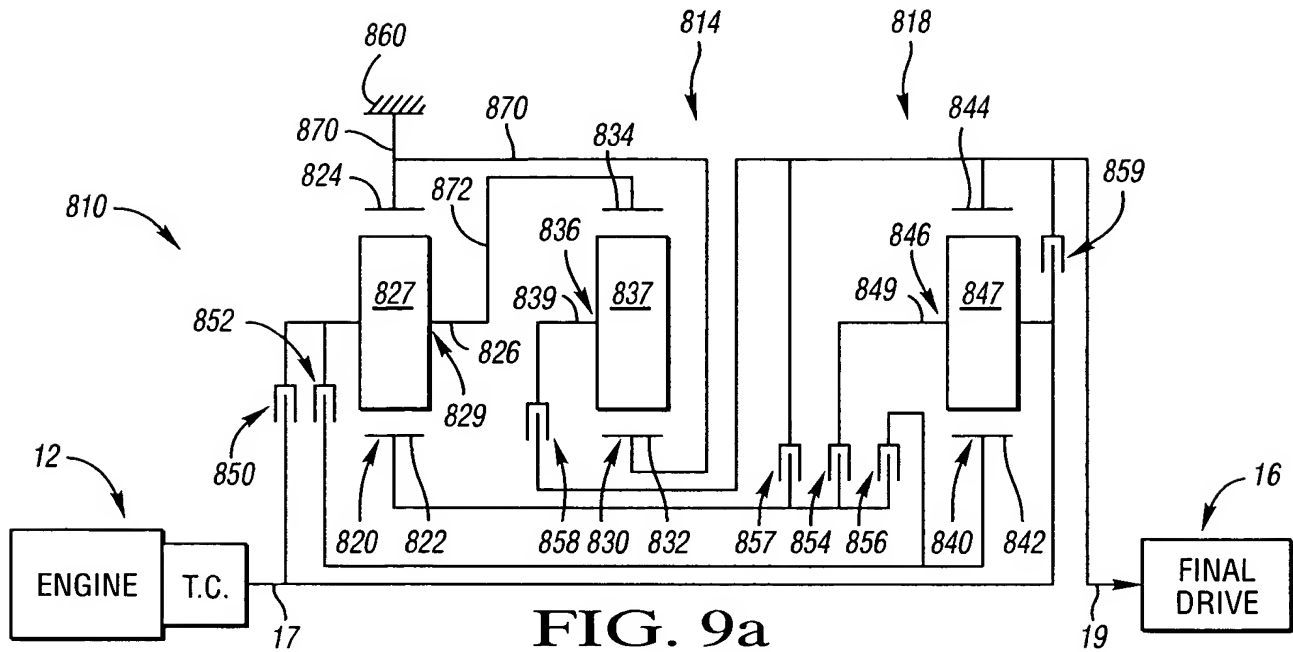
FIG. 9a

FIG. 9b

	RATIOS	850	852	854	856	857	858	859
REVERSE	-4.62	X			X			
NEUTRAL	0.00						X	
1	5.16			X			X	
2	2.53				X		X	
3	1.67	X					X	
4	1.25		X				X	
5	1.00		X					X
6	0.75		X			X		
7	0.72		X	X				
8	0.63		X		X			

(X = ENGAGED CLUTCH)

$$\frac{\text{RING GEAR}}{\text{SUN GEAR}} \text{ TOOTH RATIO: } \frac{N_{R1}}{N_{S1}} = 2.09, \frac{N_{R2}}{N_{S2}} = 1.49, \frac{N_{R3}}{N_{S3}} = 1.72$$

RATIO SPREAD	8.16
RATIO STEPS	
REV/1	-0.90
1/2	2.04
2/3	1.52
3/4	1.34
4/5	1.25
5/6	1.33
6/7	1.05
7/8	1.14
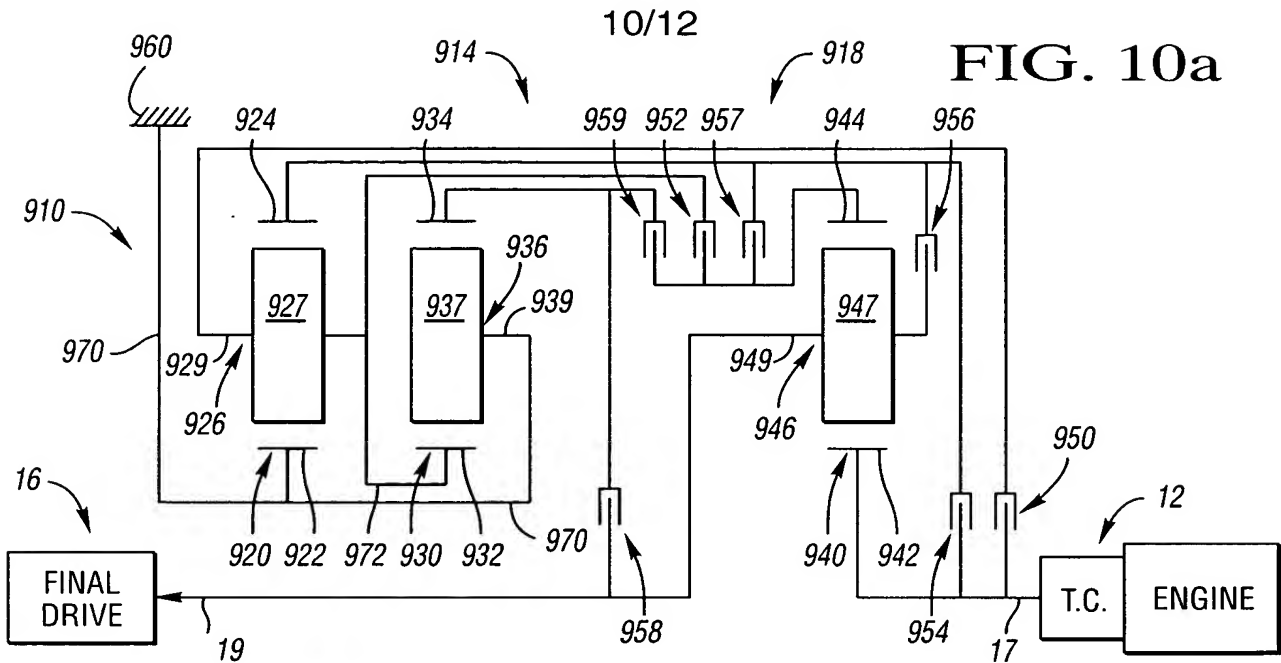
FIG. 10a

FIG. 10b

	RATIOS	950	952	954	956	957	958	959
REVERSE 2	-3.57			X			X	
REVERSE 1	-2.26	X					X	
NEUTRAL	0.00							X
1'	7.86					X	X	
1	7.48	X						X
2'	5.89		X				X	
2	4.32			X				X
3	2.92				X			X
3'	2.50		X			X		
4	1.55		X	X				
5	1.28		X	X				
6	1.00	X	X					
7	0.74	X				X		
8	0.63	X			X			

(X = ENGAGED CLUTCH)

$$\frac{\text{RING GEAR}}{\text{SUN GEAR}} \text{ TOOTH RATIO: } \frac{N_{R1}}{N_{S1}} = 1.72, \frac{N_{R2}}{N_{S2}} = 2.26, \frac{N_{R3}}{N_{S3}} = 1.50$$

RATIO SPREAD	11.82
RATIO STEPS	
REV2/1	-0.48
1/2	1.73
2/3	1.48
3/4	1.88
4/5	1.21
5/6	1.28
6/7	1.35
7/8	1.17
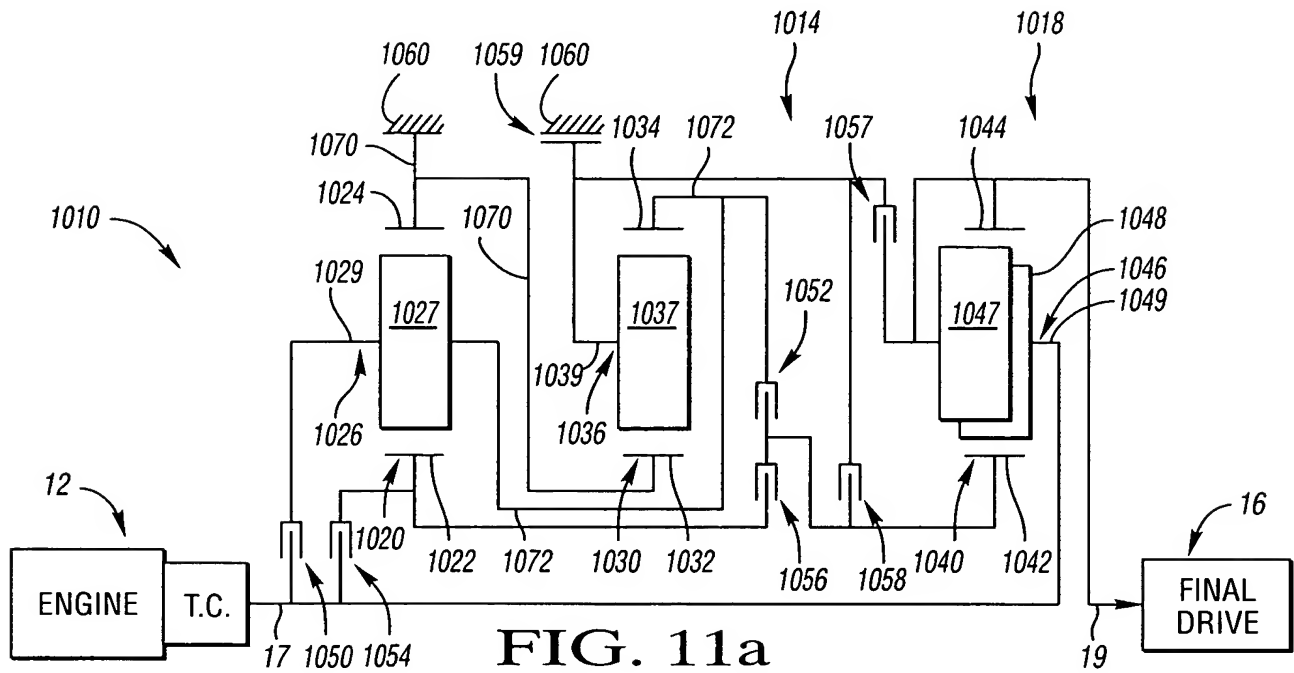
FIG. 11a

FIG. 11b

	RATIOS	1050	1052	1054	1056	1057	1058	1059
REVERSE	-7.09	X			X			
NEUTRAL	0.00					X		
1	4.62			X		X		
2	2.42				X	X		
3	1.67	X				X		
4	1.26		X			X		
5	1.00	X	X					
6	0.79	X					X	
7	0.71		X	X				
8	0.66			X			X	
9	0.61						X	X

(X = ENGAGED CLUTCH)

$$\frac{\text{RING GEAR}}{\text{SUN GEAR}} \text{ TOOTH RATIO: } \frac{N_{R1}}{N_{S1}} = 1.77, \frac{N_{R2}}{N_{S2}} = 1.49, \frac{N_{R3}}{N_{S3}} = 2.55$$

RATIO SPREAD	7.57
RATIO STEPS	
REV/1	-1.53
1/2	1.91
2/3	1.45
3/4	1.33
4/5	1.26
5/6	1.27
6/7	1.11
7/8	1.08
8/9	1.08
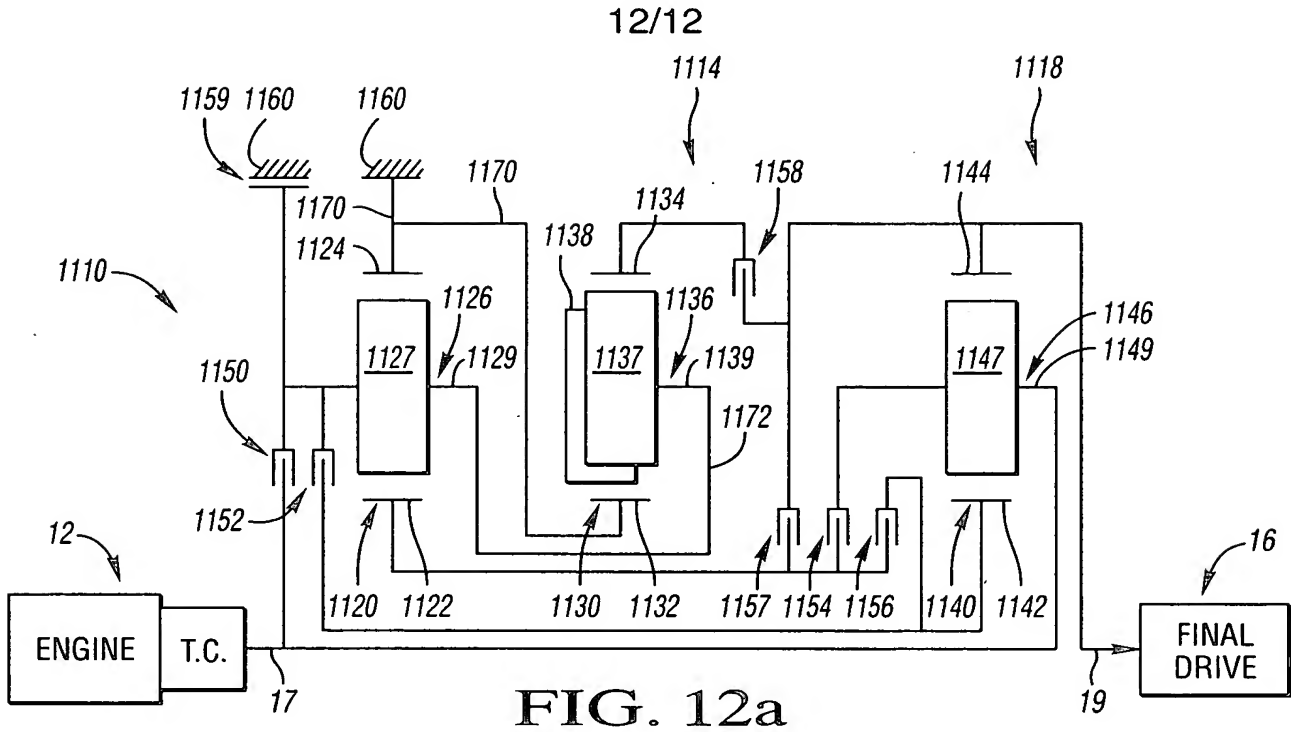
FIG. 12a

FIG. 12b

	RATIOS	1150	1152	1154	1156	1157	1158	1159
REVERSE	-4.62	X			X			
NEUTRAL	0.00						X	
1	5.16			X			X	
2	2.53				X		X	
3	1.67	X					X	
4	1.25		X				X	
5	1.00	X	X					
6	0.75		X			X		
7	0.72		X	X				
8	0.63		X					X
8'	0.32	X				X		

(X = ENGAGED CLUTCH)

$$\frac{\text{RING GEAR}}{\text{SUN GEAR}} \text{ TOOTH RATIO: } \frac{N_{R1}}{N_{S1}} = 2.09, \frac{N_{R2}}{N_{S2}} = 2.50, \frac{N_{R3}}{N_{S3}} = 1.72$$

RATIO SPREAD	8.19
RATIO STEPS	
REV/1	-0.90
1/2	2.04
2/3	1.51
3/4	1.34
4/5	1.25
5/6	1.33
6/7	1.04
7/8	1.14